

## **BYOD Implementation in Council Rock**

**In order to keep pace with rapidly evolving technology, Council Rock is implementing BYOD (Bring Your Own Device).** The goal is to enhance student learning and to create a technological environment where anyone (student or teacher) will be able to do anything at anytime from anywhere. This is an alternative to purchasing laptops or tablets for CR students and staff members, which eliminates the expense of increasing the inventory of computers/devices. This does not however, eliminate the expense of expanding the wireless infrastructure to accommodate the devices.

**CR faces a lot of challenges before it can fully implement the BYOD program at all levels.** Although implementing BYOD in the 2013-16 time frame of the District's Strategic Plan is a goal on paper, full implementation at every school will not be accomplished anytime soon. At a recent Facilities meeting, Superintendent Mark Klein said it is going to be "a slow crawl." In order for BYOD to increase student access, and integrate technology into instruction, there has to be more teacher implementation and additional money invested into expansion of wireless access. Many other school districts in the area and across the state of PA have years of experience implementing BYOD at their secondary schools, and CR could benefit from their experiences and learning curve.

### **Status of CR's Technology Infrastructure**

**At the high school level, the ability to accommodate BYOD in every classroom will be upgraded by September, 2015.** To achieve wireless and BYOD capability, the school board approved \$197,600 for added access points for each high school for a total cost of \$395,200.

**Although improvements were made at the middle schools this year, they will not be ready to handle a fully operational BYOD for 4 years.** According to Matt Frederickson, Director of Information Technology, "During the summer of 2014, the middle schools received a refresh and expansion of their wireless cloud. Each access point cost \$900 (Bid #14-31, approved by the school Board on 6/18/2014). A total of 61 access points were installed: 13 at RMS, 28 at NMS and 20 at HMS. While this does not provide one in every other classroom, it does provide enough coverage based on their current needs (where BYOD is not fully implemented). Until the new school and renovations are finished, those teachers wishing to utilize BYOD will encounter some of the same connectivity issues that teachers are currently experiencing at the high school, where it is reported that Wi-Fi and broadband in the building are not always reliable and will cause problems on some devices, but not others. As part of the renovations to HMS, and as part of the new construction for NMS, every classroom will be wired."

**At the elementary level, only Churchville, Holland and Goodnoe are fully wired.** When the PTOs at these schools donate technology devices, all funds go directly to the hardware. This past fall, Churchville donated 30 iPads and a PowerSync cart for a total of \$14,019.95.

**At this writing, there are no current plans to address the technology infrastructure needs of the 7 Elementary Schools** that have not been recently renovated. When PTOs in one of these schools donate money for technology devices, they are required by the district to provide additional access points to access the Wi-Fi needed so the devices are usable. In the fall, Sol Feinstone donated 38 iPads for \$14,252 and 10 access points for \$9,000, for a total donation of \$23,252.

### **Status of BYOD Realization**

**As of right now, only the high schools are formally piloting BYOD.** Throughout the 2014-2015 school year, three teachers at each high school are officially piloting BYOD. These teachers teach a wide variety of curricular subjects including: A/B Concepts in Math, Accelerated Psychology, AP Calculus, AP Physics (Mech and E&M), Critical Viewing, Academic English 10, 11, and 12, Honors English 11, Honors Physics, and Public Speaking. Working through the high school principals, Citizens For Education asked five questions of the six piloting teachers and received direct responses from five of the six. The sixth teacher chose to give her

answers directly to the BYOD committee. The complete responses can be found, in total, on the Citizens website at [www.citizensforeducation.com](http://www.citizensforeducation.com). Below is a summary:

**Students are bringing a variety of “Bring Your Own Devices” including smartphones, iPads, laptops, tablets, and Chromebooks.** The majority of the teachers reported that students are primarily using smartphones in class. A few students use tablets, and there was one report of a student bringing a kindle for class text.

**Teachers are using BYOD in a variety of ways, including allowing students to:**

- access the teacher’s website
- respond to multiple choice questions or online quizzes
- use Chromebooks/personal devices on the public network to create a blended environment with backchannel chat websites to check for understanding during class
- view video lectures
- participate in Web 2.0 learning activities including learning games to assess and review grammar and vocabulary
- use discussion boards to promote virtual discussions of literature
- access solutions and other classroom material from instructor
- look up information pertinent to class discussion
- do research for class assignments

\*It should be noted that other teachers at the high school who are not part of the pilot program also utilize many of the BYOD elements listed above in their classrooms.

### **BYOD at the Middle and Elementary Schools**

Although the strategic plan states that CR should “Provide focused full-time instructional technology support at all levels; and develop a plan to increase instructional technology access and support at the elementary and secondary levels” by June 20, 2014 (as reported in Citizens Fall 2014 issue found at [www.citizensforeducation.com](http://www.citizensforeducation.com)), there need to be upgrades in the technology infrastructure for BYOD to be fully operational. Currently there is an informal BYOD practice at each middle school. Across the three middle schools, there are approximately 20 teachers who periodically develop a BYOD lesson. At the Elementary schools *“other than eReaders, BYOD is not being piloted at the elementary school level.”*

**Teacher reported Pros to BYOD, in their own words:**

- Easily accessible internet and information.
- Every student has immediate access to their work without going to a library/lab; and it reduces the use of paper and photocopies.
- Because BYOD is a unique teaching tool, teachers are able to engage students in ways that they would otherwise not be able to do. Teachers observe that students have a greater engagement in the subject matter, and that utilization of BYOD drastically and immediately increases enthusiasm and participation in classroom learning.
- Students want to learn through 21<sup>st</sup> century methods, and reportedly are responding appropriately and maturely to this type of lesson design. Students are learning 21<sup>st</sup> century skills that will be useful in college and the workforce.
- Students appear to be very comfortable using their own device in the classroom. When students respond to questions on their phones, the teacher can get immediate feedback on their comprehension.
- Students have 24-7 access to the tools and resources that they use in the classroom and the ones that they use at home. So, very few assignments are “left behind” or incomplete because of a snow day or absence. Students also have 24-7 access to their teacher.
- Having MS365 (Microsoft 365 is a free software program provided by Microsoft to any requesting educational institution) helps with the varying word processing software used by students on different devices and is a positive, but there is lack of teacher training (reported as a Con below).

**Teacher reported current Cons of BYOD (until the infrastructure is upgraded this summer), in their own words:**

- Wi-Fi and broadband in the building are not always reliable and will cause problems on some devices, but not others. The filter on public Wi-Fi does not allow access to some of the necessary sites/activities. It takes time to get the programs downloaded onto computers or iPads.
- Another challenge is that students need to charge devices and the lack of charging locations throughout the building is a problem.
- Classroom management is different and requires different strategies of teachers and responsibilities for students. Devices can be a potential for distraction.
- It requires a lot of preparation time and technology prowess on the part of the teacher to prepare for and troubleshoot issues. Students and teachers need to be innovative and flexible and [one teacher reports that] almost none of the lessons work as planned due to technological difficulties.
- It does take time to learn what programs are available and how to use them, and... still learning about all the resources available....
- ...this may become too easy of a path to send material, allowing a teacher to possibly send too much review to eager students.
- One teacher reported that she saw no cons.

**Citizens asked the teachers piloting BYOD to offer recommendations.** Citizens correlated the teacher recommendations to the District Strategic Plan (the comprehensive plan to be implemented between 2012 and 2016) and, when available, the Administration responses to the recommendations (in italics).

- Would love to see the district offer more teacher training and support for BYOD. This need was identified in the strategic plan (page 87), which states "...by providing better training and resources, allow educators, administrators and students to better utilize existing technology and adapt quicker to new technology."
- More training with MS365. The Administration responded, "*There is no formal training needed as there are training videos, etc. available through MS365 as well as on our district resources. As all staff currently use the MS Office Suite of software, their needs will be based on how MS365 functions differently and this is easily covered through these training materials and resources.*"
- The district had a position where someone was a full time instructional technology coach. The Administration stated, "*This position was eliminated several years ago and has been requested in almost every budget year. It made the budget in 13-14 but was eliminated because of other priorities before anyone was hired.*"
- Streamlining the process for buying and updating iPad apps because the approval from the department coordinator even for a \$1.99 app takes time. The Administration responded that there is "*a need for the curriculum coordinators to have oversight.*"
- More Wi-Fi, more broadband, and charging stations. The Administration responded: "*there are plans to update the Wi-Fi at both high schools this summer but currently no plans for charging stations.*"
- A tech coach who would provide assistance to students who may have technology questions or need advice on how to trouble shoot a problem, or a technology helpline - someone you can call if you are having a problem for students and staff. The Administration responded, "*Although this is an interesting approach to provide assistance and support, it also opens up some potential difficulties. We have tried to provide our support and help in-house, and have an intranet where teachers can and do share information, as well as a number of online resources, chats, etc. for teachers to gather information, learn.... In addition, we utilize BigWebDesk, which allows teachers to submit questions or requests for support to our technology department. Lastly, we have technology coaches at each school that serve as an additional resource for staff. We will continue to explore various opportunities to support teachers in their use and integration of technology.*"
- Web 2.0 tools for any planned activities.
- Guidelines in what should be permitted in an email.
- An electronic etiquette course offered to students at the elementary level. Per the Administration, "*This currently takes place at the middle level in the Computer class. In addition, informally,*

*teachers and administrators regularly share with all students appropriate and inappropriate use of technology and etiquette when appropriate to the classroom activities and discussion.”*

**The BYOD committee is comprised of 25 members including teachers, administrators, and the technology department staff.** Barry Desko, Director of Secondary Education, heads the committee. They will be meeting in April to discuss the feedback and insights from teachers who are piloting and who already use BYOD. This will help to further guide the implementation of BYOD in Council Rock, and Citizens For Education will continue to report on this and all technology issues.